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INTRODUCTION

Immunopathology of pregnancy and conception

Sinuhe Hahn

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The symbiotic relationship between a mother and her semi-allogeneic fetus remains an immunological riddle, and it has been suggested that disturbances in this delicate tolergenic balance may underlie several pregnancy-related disorders, such as recurrent fetal loss or preeclampsia. In this volume we are fortunate to have several leading researchers in the field discuss their recent findings, many of which have lead to new insight or concepts and which may, in the future, form the basis for new therapeutic approaches.

It is of considerable interest to witness how old dogmas have been altered or disproven, such as the much debated Th1/Th2 paradigm. In this manner uterine natural killer cells are now shown not to play a role in the immunological rejection of foreign fetal tissue but, rather, to play an important role in tissue remodeling required for successful placentation, and this process may be distorted in preeclampsia.

The importance of the innate immune system in this enigmatic disorder is underscored by the very recent observation that excessive formation of neutrophil extracellular traps occurs in preeclamptic placentae and that this may contribute to the condition of placental hypoxia/hyperoxia, so evident in this disorder. On the other hand, the critical role of the adaptive immune system is underscored by the pivotal role shown to be played by regulatory T cells in maintaining a state of feto-maternal tolerance, as is the potential role of cytokines such as macrophage migration inhibitory factor and cytokine dysregulation in preeclampsia.

Furthermore, a bold new hypothesis proposes to link neuro-endocrine-immune-disequilibrium with endometriosis, indicating that stress-induced neuro-immune imbalances not only play a role in fetal loss or preeclampsia but also in endometriosis. Additional chapters address new insights into anti-sperm antibodies and conception, anti-phosopholipid antibodies, and recurrent fetal loss, as well as amelioration of rheumatoid arthritis during pregnancy, while a detailed illustrative review of placentation helps sets the stage for those not familiar with the intricacies of human pregnancy.

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S. Hahn (✉)
Laboratory for Prenatal Medicine and Gynecologic Oncology,
University of Basel,
Hebelstrasse 20,
4031 Basel, Switzerland
e-mail: SHahn@uhbs.ch